

Ingals (E. F.)

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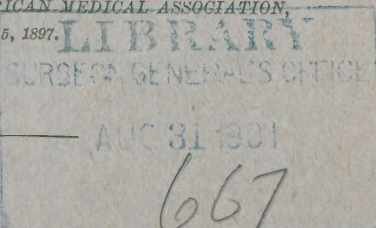
President's Address Delivered at the Meeting of the American Climatological Association, Washington, D. C., May 4, 1897.

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BY E. FLETCHER INGALS, M.D.  
CHICAGO.

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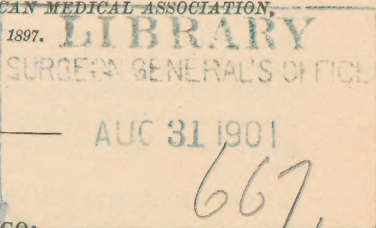
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THE ANTISEPTIC TREATMENT AND THE  
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*Gentlemen of the American Climatological Association.*—In assuming the duties of your presiding officer, I again thank you for the high honor which you have conferred upon me and wish to congratulate you upon the status of this Association. From the origin of this Association to the present time it has steadily increased in numbers and grown in influence until at present its members are scattered throughout the length and breadth of this land and exert an untold influence for the advancement of science, the alleviation of suffering and the prolongation of human life. In 1884 this Association numbered forty-two members. Since that time we have had enrolled, all told, 191 names. Of these, ten have been dropped, thirty-five have resigned and thirty-two have finished their work. During the year just passed we have been called upon to mourn the loss of one of our fellows, Dr. Jacob Reed, of Colorado Springs. Dr. Reed had lived in Colorado Springs over twenty years and was much respected and beloved by his acquaintances. He was a man of strong individuality and an active, earnest physician who will be greatly missed. Today we number 114 active members and the council will present several new names for your consideration.

When this Association was first organized the climatological possibilities of the United States were almost unknown; since then the industry and enthusiasm of our members, aided much by the accurate

data obtained by the United States Weather Bureau, has demonstrated the fact that within our borders may be found every variety of climate possessed of value in the healing or prevention of disease. Twenty-five years ago there were a few more or less noted health resorts in the country, where invalids repaired of their own volition, or were occasionally sent by the few physicians familiar with the locality; but numerous places where invalids may now obtain satisfactory accommodations in the best atmospheric conditions were unknown. That the members of our Association have done much in searching out the more valuable resorts and in securing suitable accommodations for patients can not be gainsaid, and that we have correspondingly added our share to the great work of prolonging human life and mitigating suffering, no one can doubt, but that very much is yet to be learned, that the deductions from our observations are still in many instances crude, and that we have often been too enthusiastic in our hopes for individual localities, can not be denied; yet, as a rule, our members have been reasonably conservative in their estimates of the value of climate and have patiently and conscientiously studied and labored for the advancement of science and the benefit of their patients.

Over-estimation of the value of climate, as well as of drugs, often occurs through inexperience or over-enthusiasm of the physician, and usually the most laudatory articles are from the pens of those having comparatively little information. We all grow more conservative as the years go by and most of us learn that the deductions from some, even of our own, earlier observations are erroneous; therefore, it not infrequently happens that the careful physician finds himself unable to accept the conclusions even of one who may have been painstaking and conscientious in his work. The physician must needs wait two or three years for any climate or any medicine to be tested before he can form a fair estimate of its value. It must be remembered that the varying conditions



affecting limited observations may necessarily militate much against the conclusions drawn from them and, therefore, one who is slow to accept new hypotheses should not at once be put down among ancient geologic specimens.

The purpose of this paper is not to build up new theories nor yet as an iconoclast to tear down where we are unable to replace, but to draw the attention of this Association and of those who may read our proceedings, to a few important facts which seem established by experience.

In the title of this paper I have referred to the antiseptic treatment of pulmonary tuberculosis which, in the light of our present knowledge of the origin of the disease, seems to me to have a specific tendency to check its progress, though I would in no way minimize the importance of tonic and supporting treatment and of good hygienic surroundings.

Since the Koch bacillus was recognized as the ultimate cause, that under favorable conditions, produces tuberculosis, there have been unceasing experimentation and careful clinical observation to find some agent or agents that would destroy the microbes without injury to the tissues upon which they rest or within which they may be imbedded. Contemplating this long line of experiments and scrutinizing the vast array of statistics, we are forced to admit that it has not been demonstrated that any remedy, or any class of remedies, has the power to destroy this bacillus when ensconced in the human body, with any degree of certainty; yet when we carefully analyze the various methods of treatment that have been more or less successful in checking the progress of the disease, we nearly always find that they have been of a distinctly antiseptic character.

We must remember that, although the bacillus is the ultimate cause of tuberculosis, it is innocuous excepting under favorable conditions, and therefore those supporting measures that enable the tissues to pen up or to bar out this pestilential microbe must receive

a large part of the credit for the successful management of any case. The late Austin Flint, in his work on phthisis, stated that very many of the phthisical patients that had recovered were those who had refused or neglected all treatment. This must not be taken as advice to those suffering from tuberculosis to rely upon mental influences and reject the assistance of science, for it is reasonable to suppose that the majority of those who have recovered without any assistance have done so from the sheer resisting force of their vital processes, and that many of those who did not recover relied too long upon the *vis medicatrix naturee*, only to find that it failed at the end, while judicious treatment might have saved their lives.

The fact referred to by Austin Flint reminds us that we must be extremely cautious in attributing to any particular remedy the benefit that may occur in any individual patient, or in any series of patients, with consumption; yet typical cases that have been cured, and have remained well under conditions where the majority of patients would have steadily grown worse and died, may justify us in believing that the remedies used were of some value and that a more perfect application of the same may ultimately lead to even better results. I know, and I wish that the general profession could realize as it should, that no case of consumption can be classed among the cured in eighteen or twenty months and that even many who live for years can never properly be called cured. Nevertheless, I hope to show by a few briefly reported cases that betterment sufficient to commonly be termed a cure may often be obtained from antiseptic treatment. From my own experience I fully believe that aside from tonic and nutritive agents, antiseptics are the only medicines that have any power in checking the progress of tuberculosis, and I as firmly believe that when they are thoroughly used so as to bring the system as nearly as possible to a point of saturation they are of great value in a large per-



centage of cases, if used in the early stage of the disease.

The first case to which I wish to call attention was treated by the Shurly method and reported, with a series of others, to this Association several years ago, but it has acquired additional interest from the time that has elapsed since that treatment, and from the good health the patient now enjoys, though he remains in the same surroundings as when the disease was contracted. In this instance the patient greatly improved under the use of iodine and, later, oil of cloves, with the occasional use of the extract of hyoscyamus, nux vomica and quinin for cough, appetite and digestion. The chief benefit appeared to come from the antiseptics.

*Case 1.*—V. W. J., aged 29, clerk, came to me in February, 1891, complaining of cough and expectoration of three or four weeks' duration, and stating that he had not been well for four or five months. He was able to attend to business, had not lost much flesh, but the pulse was 96 and the temperature 99. He was raising at the time about two ounces of mucus daily and had had two moderate hemorrhages in the past few months. There was not hereditary predisposition to phthisis. Physical examination showed diminished motion with high-pitched respiratory sounds over the left apex as low as the second rib, and indistinct subcrepitant râles. The microscope revealed many tubercle bacilli in the sputum. I instituted the Shurly treatment, injecting from seven to fifteen of the solution of iodine every two or three days. I gave also a bitter tonic. The injections were continued in this way for about four weeks and subsequently once a week for six or eight weeks longer. At the end of eight weeks it was noted that he was doing well, the weight was normal and there was very little expectoration. Subsequently the patient was seen at intervals varying from one or two weeks to three or four months, or a year or more, at times when he had taken cold, or had some special cause of debility, but he was not kept upon any continuous treatment. Two years after he first began treatment, on account of a renewed cold with increased cough, he was given strychnia, with other bitter tonics, and the oil of cloves as an antiseptic. He took the oil of cloves in twenty-five-drop doses for about three months, beginning it at a time when he went South for a vacation of five or six weeks and continuing it six weeks after his return, by which time he had gained fifteen pounds and felt so well that he discontinued all treatment. On two other occasions, when he became run down and

the disease seemed to be lighting up afresh, he took the oil of cloves with the result, as he believes, of speedily checking the trouble.

Other remedies consisted of tonics, digestive agents and occasionally hyoscyamus as needed. He was out of the city on two or three occasions, but only for a short time. In January, 1897, when he returned to me on account of a slight cold, he was looking very well, and had had no symptom of tuberculosis for a long time.

*Case 2.*—The following case was also reported at the meeting just referred to, and as the patient is still in very good health a brief résumé of the history is of interest as it apparently shows good results from the antiseptic use of iodine, although the improvement has been mainly due to climate. I first saw Mrs. W. B. N. in April, 1888, when it was found that consolidation of the left apex extended as low as the third rib; subcrepitant râles extending considerably lower, with a few subcrepitant râles over the upper part of the right apex. She was given tonics and supporting treatment together with inhalations of iodine, under which she steadily improved until the latter part of gestation in the spring of the following year. Shortly afterward she began to decline and steadily failed until in August of the same year when the signs of phthisis had much increased and there was a large vomica in the left lung. She was extremely weak and anemic and her life was despaired of. She was so ill that it seemed impossible to obtain benefit by change of climate, but her friends insisted upon it and took her to California to an elevation of 2,500 feet. During most of her illness she had suffered much from disturbance of the digestive organs, and after arriving in California had what appeared to be an attack of tubercular meningitis; however, she gradually recovered and subsequently went for a few months to an altitude of 3,500 feet, in Texas, and later on to Las Vegas where she remained for a couple of months. At the time she went to Las Vegas I was using iodine according to Shurly's method and at my suggestion her physicians there placed her upon it. During about two months that she remained under the treatment she gained very rapidly and the expectoration greatly diminished. She then went to Colorado Springs where she is still living in comfortable health, though fibrosis has extended well through the left lung. When I first examined the sputum in 1895, it contained many tubercle bacilli. In this case climate undoubtedly should be given the credit for nearly all of the improvement, but although life was saved under the most unpromising circumstances by the antiseptic air of a good climate, yet two periods of especially marked improvement were coincident with the use of iodine, and the improvement was so great that I feel justified in believing that it was aided much by the antiseptic.

*Case 3.*—In the following case no other treatment was em-

ployed than the oil of cloves, which appeared to cause great improvement, but I saw the patient only twice and am unable to ascertain the subsequent history. Mrs. X., about 35 years of age, came to me about two years ago with well marked symptoms and signs of the early stage of phthisis. I ordered for her the oil of cloves in doses ranging from five to twenty-five drops five times daily, and I did not see her again for three or four months. She then returned having lost all of the symptoms of tuberculosis and many of the physical signs. She said she felt perfectly well. The improvement in this instance seemed entirely due to the antiseptic treatment, and the result might safely be called a cure if she still maintains the condition in which I last saw her.

*Case 4.*—The following case had the benefit of both internal antiseptics and of an antiseptic atmosphere.

Dr. G. C. A., aged 26, had been in good health previous to consulting me on August 18, 1894. He had lost one brother and two uncles from tuberculosis. Two months before seeing me he had a hemorrhage from the lungs and his temperature ran up to 103. At the time he consulted me his appetite and digestion were good but he had lost twenty pounds of flesh and was having a daily temperature of 100.5 to 103 F. He was coughing considerably and expectorating about one and one-half ounces of muco-pus daily. I found slight dulness at the left apex, low as second rib, with feeble respiration and sub-crepitant râles extending down to the fourth rib. Microscopic examination showed many tubercle bacilli in the sputum. Antiseptics were ordered but when I saw him a few weeks later he looked so much worse that I was not at all surprised in a few months to hear the report of his death. However, the report proved untrue, for in November of the same year he had gone to Montana to an altitude of about four thousand feet, where he rapidly improved, gaining fifteen pounds within two months; but when the weather became bad he caught cold and began to fail. Shortly after he went to New Mexico where he again improved. During all this time he had been using guaiacol applied to the surface, and creasote internally. Soon after he arrived in Las Vegas, January, 1896, his cough disappeared and with it the pains which he had formerly suffered in the chest. He soon found that his respiratory capacity was increasing and ere long the difference in the circumference of the chest between inspiration and expiration amounted to five inches and he had gained thirty-one pounds since going to a high altitude. He continued the guaiacol and creasote and also took cod liver oil alternating at times with syrup of the hypophosphites. This patient is now living in Denver in good health. In this case the almost continuous use of antiseptics was combined with the benefits of a high altitude and dry atmosphere, but the patient attributes much of the benefit to the antiseptics, and I have no doubt he is correct.



*Case 5.*—In the following case the improvement was apparently due to tonics and alcoholic stimulants. Mrs. D. K. M., aged 25, came to me on Nov. 15, 1895, complaining of pain in the left lung of three months' duration, cough, afternoon fever, dyspnea and loss of strength. She had lost ten pounds in weight in three months. She expectorated a small quantity of thick whitish sputum and about a month previously had raised nearly half an ounce of blood. The pulse when I first took her was 88, temperature normal. There was dulness at the left apex as low as the first rib. Subcrepitant râles numerous at the apex in ordinary respiration and heard all over the left lung on deep breathing. Respiratory sounds were diminished in intensity over the upper half of the lung. Many tubercle bacilli were found in the sputum. She was given moderate doses of *nux vomica*, *hyoscyamus*, quinin and carbonate of guaiacol in capsules. She continued these remedies for a year, but it does not appear to me that the doses of guaiacol were large enough to in any way account for her improvement. During this time she took a small glass of whisky before each meal and at bed time, and probably from this cause gained fifteen pounds. A year later, February, 1897, she had gained a few pounds more, was much stronger, being able to walk several blocks a day, coughed very little indeed and that only to clear the throat. Her pulse was reported to be from 84 to 88, but the temperature record I could not obtain. She had a splendid appetite and appeared practically well. This patient went to Manitou, Colo., for ten weeks shortly after she began the treatment and subsequently spent a few weeks in Kansas City, but she was steadily improving before she made these trips. She still takes the whisky occasionally.

*Case 6.*—The following case was uniformly benefited by anti-septic medicines although he also had the advantage of a good climate part of the time. Mr. A. G. A., aged 39, came to me first in September, 1891, complaining of hacking and clearing of the throat for the last three years and hoarseness for the last three weeks and some pain on swallowing. He had lost weight and strength and had experienced five or six hemorrhages from the lungs four months previously amounting to eight or twelve ounces each, as nearly as he could ascertain. He had a poor appetite, and had lost about ten pounds in weight and had suffered from dyspnea upon exertion. His pulse was 72 and temperature normal when I first saw him. The epiglottis and arytenoids were swollen 30 per cent., and the vocal cords considerably congested. There were no distinct sounds over the lungs upon percussion, but there was broncho-vesicular breathing with a few subcrepitant râles extending as low as the second rib in front and to the seventh rib behind. Microscopic examination showed a large number of tubercle bacilli in the sputum. I ordered for him the chlorid of calcium and maltine with hypophosphites, with small doses of *cannabis indica* and *hyoscyamus* to relieve

cough and nux vomica and quinin to improve the appetite. He went to Colorado where he remained for five months. During this time and until a month later he continued to take the medicines first ordered. He then called at my office and reported that he had not gained much in weight but had a good appetite and was very well. At this time I ordered for him the oil of cloves in doses of from five to fifteen minims to be taken five times daily. He returned to his home in Northern Wisconsin, where he remained until the following December. He then went again to Colorado for four months and from there returned to his home where he has remained ever since. I first gave him the oil of cloves May 21, 1892, and he took it for sixteen months, half of the time in doses of forty-five drops a day and the remainder of the time in doses of seventy-five drops daily. During this time he had gained about twenty pounds in weight, which he retained until the latter part of August, 1896, when he had another hemorrhage followed by severe gastric disturbance which continued for many weeks. During this attack he lost twenty pounds. In January, 1896, I ordered for him the carbonate of creasote which he took for about sixty days and then went back to the oil of cloves, which he continued to the first of March, 1897, since which time he has taken nothing. He has since then had an attack that he calls grippe and has lost ten pounds more. His appetite is not very good, but his pulse is only 84, temperature normal and he says he feels in fair general health and strength, and has at present very little cough and expectoration. He tells me that he has always improved when taking the oil of cloves, and he attributes most of the benefit that he has received to that remedy.

*Case 7.*—In the following case the improvement may be attributed to alcoholic stimulants alone. Mr. D. W., aged 47, came to me November, 1894, complaining of having taken cold and having expectorated about five or six ounces of blood in the last few days. He had been feeling poorly for about two weeks. There was a hereditary history of consumption on both sides of the family and he had lost two brothers and two sisters with the disease. His weight was normal, pulse 132, temperature 99.6. Physical examination showed consolidation of the left apex with not very well defined broncho-vesicular breathing and a number of subcrepitant râles. Many tubercle bacilli were found in the sputum. The oil of cloves was ordered for the patient, together with nux vomica, quinin and carbonate of guaiacol, but he appears to have discontinued all treatment after a week or two excepting three to five good drinks of whisky daily. Two years later when I saw him he had gained twenty pounds, the pulse was 102, the temperature normal and there were very slight physical signs of disease. He told me that he felt as well as he ever had in his life. In this instance I am inclined to attribute the improvement to the nutritive and

antiseptic properties of the alcohol contained in the whisky. In health the bactericidal properties of the blood are able to destroy the bacilli with which we are constantly being infected; but in the depressed state accompanying actual pulmonary tuberculosis these elements are more or less deficient. If in this condition some antiseptic be introduced in small or larger quantity, according to the condition of the blood, we should be able to make up for this deficiency. If there is any ground for this belief, alcohol is exhaled so freely that it does not seem unreasonable to attribute to it an antiseptic influence in phthisis. The patient did not go out of the city and indeed made no change whatever in his residence or business excepting that he was obliged to take more rest because of great weakness.

*Case 8.*—The following history illustrates the fortunate outcome of a case of tuberculosis without the aid of either antiseptic remedies or antiseptic atmosphere. Although it appeared most unpromising in the beginning, it is introduced with the hope of rendering the reader more conservative in estimating the value of remedies and climates. Mrs. L. B. J., aged 31, came to me in February, 1891, complaining of trouble with the lungs of three years' duration, though she had been worse during the preceding six weeks. There had been consumption on her father's side of the family and she had suffered from inflammatory rheumatism five different winters several years ago. She had a very troublesome cough, especially in the morning, and expectorated about five drams of muco-pus during the day, containing some blood at times. She weighed 147, having lost about five pounds. The pulse was 88 and regular, the temperature 100. She had a good appetite but poor digestion. Physical examination revealed dulness over the upper part of the left lung with subcrepitant râles as low as the seventh interspace and the microscope showed many tubercle bacilli in the sputum. She was then ordered moderate doses of cannabis indica and hyoscyamus to relieve cough, nux vomica for her appetite, creasote in small doses and papain for the digestion. She was given also a few injections of the chlorid of gold and soda and of iodine according to Shurly's method, but she objected to it on account of the pain. She continued internal remedies similar to those first ordered much of the time for about three months and subsequently I only saw her at irregular intervals of several months or a year or more. Four years after she first visited me there were still a great many tubercle bacilli in the scanty sputum, but she had gained flesh and to external appearance was in perfect health. Subcrepitant râles, which at times had been very numerous over the chest, had disappeared. I have not seen her for a couple of years, but my associate saw her upon the street in March of this year and reported that she appeared in excellent condition. After the first three months of treatment she took



no remedies regularly, and she has not been out of Chicago for any length of time.

It is unnecessary to cite cases that have been relieved or cured by climatic treatment, because every one who has had much experience in the treatment of pulmonary tuberculosis must have observed many patients who were undoubtedly benefited by change of climate, yet in a large percentage of such cases it is impossible to estimate accurately the real cause of improvement. I have no doubt that in many instances the change of food, of scene and of other surroundings which might stimulate the process of nutrition, has as much to do with the favorable progress of a case as continued residence in a pure atmosphere. This was illustrated in the case of a gentleman who was for several years under my care in the latter part of the eighties suffering from pulmonary tuberculosis, but who without any change of climate maintained a good degree of health that allowed him to attend to business with only now and then a few days' confinement to the house; but at the end of three or four years he began to have hectic fever, to emaciate rapidly and to cough excessively. There were present also numerous pulmonary signs indicating rapid progress of the disease in the lungs. At the time his financial condition was such that he felt unable to go to a different climate, but he obtained the opportunity of making a short trip of only about three weeks to Dakota, from which he returned very much improved. The improvement steadily continued, and in the course of a few weeks more he was as well as he had been for a long time. Subsequently he continued at his business for about four years, then again began to decline and went to the southwest into a dry atmosphere and high altitude, where he again improved for a time, but at the end of a few months he died suddenly from hemorrhage. In this instance certainly very little could be attributed to the pure atmosphere, and we have every reason to believe that the improvement was like that of many other persons whom we every year see

gain greatly in mental and physical vigor from short vacations.

If we concede that certain cases may be benefited by a simple change to agreeable scenes and surroundings, we must also admit that certain other cases, when placed in the best climate away from home and friends and under various depressing conditions, speedily grow worse and rapidly decline and die; whereas they might have lived for months, or possibly years, if they had remained at home. Another difficulty in estimating the value of climatic influences arises from the fact that some patients, when they go away from home, continue the same treatment which had been used previously, and therefore it would be unjust to ascribe all improvement to the climatic conditions. Many physicians in favored climates are accustomed to tell patients as soon as they arrive in the pure atmosphere to discontinue all previous treatment; but at the same time some physicians endeavor to impress upon the patient's mind the necessity of yielding themselves to the climatic influences, with the aid of such remedies only as the exigencies of the physician may demand. I believe that in many cases such advice is most untimely, for if we admit that remedies do any good in unfavorable climates, we must also admit that the same remedies should aid in the restoration to health much more when the patient was placed amid favorable surroundings. I have known not a few who were doing comparatively well at home go to a favorable climate with the result of becoming immediately worse and rapidly declining to death. Some of these I fully believe might have lived much longer if they had not made the trip, and some of them I think might have continued to improve even more rapidly with the trip, if they had continued former remedies.

As I have elsewhere stated, I believe that, all told, about 33 per cent. of patients with pulmonary tuberculosis recover under ordinary conditions, and I think that patients sent early to a high altitude and dry

atmosphere have their chances increased fully 50 per cent. This belief is based upon the well-known fact that the records of autopsies show that in 25 per cent. of bodies dying from other diseases than pulmonary tuberculosis, the previous existence of this disease is demonstrated in the apices of the lungs; also upon the oft-repeated statement that a large percentage of those sent early to a good climate recover; and further, upon my personal observation of many cases. After consolidation of the apex of the lung has extended below the third rib, by which time the second stage is generally fully established, I feel that I have ample reason for believing that from 15 to 30 per cent. may be greatly benefited by climate, although life is seldom prolonged more than five or six years. Even after breaking down of the lung tissue has begun, a few may have their lives considerably prolonged by suitable climate. I have no doubt, however, that in the latter part of the disease the fatal result is generally hastened by the fatigue and the mental and physical distress incident to the journey. The physician should carefully study not only the physical, but the social and financial conditions of his patient before recommending a change, and while it is not necessary to say it to the members of this Association, I wish to impress upon others that it is neither scientific nor kind to send patients with consumption indiscriminately to places from which we have simply heard favorable reports. As a rule, in the first stage a warm climate is most salutary, but it is not so important, providing an abundance of sunshine and a dry atmosphere are obtained, although many phthisical patients are better in a southern latitude in winter. It will be found that patients who feel best in winter are likely to be benefited by a comparatively cool climate, the others in a warmer temperature. In the first stages it is desirable, when there are no contraindications, that patients go to an altitude of from six to seven thousand feet, but this is not suitable for persons who are nervous to a marked degree or who have a high



temperature, or who have pronounced cardiac disease, emphysema, or laryngeal complications. Laryngeal tuberculosis is generally markedly aggravated by high altitudes. Hemoptysis is not, as is often supposed, a contraindication to a sojourn in a high altitude. On the contrary, bleeding is often promptly checked by this change, and those who seldom or never have hemorrhages in a high altitude frequently experience them quickly upon return to a lower level. In the second stage of the disease a high altitude is often beneficial, but we can not feel so certain of its results, therefore it is best to send the patient to an altitude of not more than two or three thousand feet, and if they do well, subsequently advise the higher level. A warm, moist atmosphere seldom seems to have any useful effect in prolonging the life of consumptive patients, though it undoubtedly adds to their comfort in certain instances by relieving the irritability of the bronchial mucous membrane. The majority of patients who are unable to take care of themselves seldom receive much benefit from a change of climate, but as a few of them do, the experiment is constantly made, more often, I think, by the friends than by the physician. Wherever practicable, even in the best cases, it would be desirable for friends to accompany the invalid, because we must not forget the necessity of maintaining the nutrition, not only by suitable food, but by cheerful environment foreign to those who, sick and lonesome, find themselves the prey of nostalgia. Before recommending a patient to change climate, we should inquire as carefully as practicable as to his disposition and social and financial condition. If he is unable to obtain the comforts and some of the luxuries of life away from home, it is generally unkind to recommend any change of climate, because the chances are greatly that it would do more harm than good. If he is despondent he should have a cheerful companion. If he is in constant terror from the bacilli floating in the atmosphere, or is depressed by the sight of sickness in others, he should be removed as far as possible from

other invalids suffering from tuberculosis. Indeed, this would be a good rule in many cases, but it is hardly ever practicable, because as soon as a locality obtains a reputation in the cure of tuberculosis, many invalids are attracted thither. The physician must remember that he has a duty to others as well as to the patient, and that he must sometimes consider the healthy friends, or more particularly the widow and helpless children soon to be thrown upon the world. Hard-hearted as it may appear, the physician must then answer to his conscience whether it is right to advise the friends to make great sacrifices with the hope of prolonging the invalid's life for a few weeks or months. As a general rule, our duty is to the patient only, but this, like other general rules, is subject to many exceptions. Unhappily, it is only in the minority of cases that experts in the Eastern or Middle States are consulted as to the wisdom of a change of climate by the patients who come under their observation. The greater number come with their minds already made up to go somewhere, so that we can only guide them to the least objectionable place. This explains the fact often observed at health resorts, that the majority of patients sent away might better have been kept at home.

In conclusion, in addition to tonic, supporting and anodyne remedies various antiseptics appear to possess great value in the treatment of pulmonary tuberculosis, but in order to get good effects it is imperative that the system be as nearly saturated with them as possible. They should be given at first in small doses, but the amount should be steadily increased until the maximum dose is obtained, care being always taken not to disturb the digestive organs. For example, with the oil of cloves we may begin with five drops to be given in capsule from three to five times daily after each meal and in the middle of the forenoon and of the afternoon, the medicine always to be followed by a glass of milk. The second day the dose should be six drops, the the third seven drops, and so

on, until a dose of twenty-five or thirty drops is given each time.

Creasote can seldom be given in sufficient quantity to have any material effect, because of the disturbance of the digestive organs which it is liable to cause and because of its coagulating effect upon all albuminoids. The same may be said of carbolic acid.

Carbonate of creasote is much more bland and may be given in doses of from five to sixty drops after each meal with great benefit.

Guaiacol may be given in much the same way as the oil of cloves, though in somewhat smaller doses, but it is usually less easily borne than the carbonate of creasote or oil of cloves and often can not be tolerated in sufficient quantity. The carbonate of guaiacol may be used in much the same way as guaiacol itself, but most patients seem unable to take it in sufficient doses.

Oil of cloves and carbonate of creasote are the most satisfactory antiseptics for internal use. Iodin may be used as recommended by Shurly with undoubted benefit, but it causes considerable pain and is open to the objection that it necessitates too constant attendance of the physician; it may also be used advantageously as an inhalent.

Patients should not be sent from home unless their financial and social condition is such as to render the journey and sojourn easy and agreeable.

In the first stage of the disease patients should as a rule go to a high altitude where the atmosphere is dry and as warm as practicable. In the second stage they should be sent to a medium altitude and in the advanced stage, if sent anywhere, it should be to a low altitude.

Patients who have been improving on any course of medication should not discontinue it upon going to a different climate, but, however valuable any remedy may appear, it should not be continued if it becomes clear that it is deranging the digestion.

When sojourning in a favorable climate the patient



should be out of doors as much as practicable during the pleasant portion of the day, should avoid excessive heat, excessive cold and unusual fatigue.

Of anodynes to check cough hyoscyamus, camphor, cannabis indica, stramonium and conium are of the most value, because they can generally be taken in sufficient quantities without disturbing the digestion, whereas opiates are usually deleterious in whatever form they may be employed.

The majority of patients sent from home in the latter stages of pulmonary tuberculosis are injured by the journey and their lives correspondingly shortened, though in a small percentage very great benefit is obtained in a warm and very dry climate.



